

ABSTRACT OF THE DISCLOSURE

A mass transfer column (20) is provided with an external shell (22) defining an open internal region (24). Centrifugal contact trays (26) and return contact trays (28) are positioned in an alternating and vertically spaced apart relationship within the open internal region (24). Each contact tray (26) and (28) has a plurality of vapor passages (34) for allowing vapor to flow upwardly through the tray deck (30) and (31), respectively, to interact with liquid on the surface of the tray deck. At least one center downcomer (42) extends downwardly at an opening in the return tray deck (31) and has a lower discharge outlet (54). At least one annular downcomer (38) extends downwardly the periphery of the centrifugal tray deck (30) and has a lower discharge outlet (48) spaced above the return tray deck (31) for feeding liquid onto the return tray deck (31). A plurality of baffles (60) extend upwardly from the return contact tray (28) at the center downcomer (42) and transfer a portion of the load of the centrifugal contact tray to the return contact tray. A center support plate (58) is positioned between upper ends of the baffles (60) and the overlying centrifugal contact tray (26) to provide a greater area of support. A support ring (66) is secured to the column shell (22) and a pair of support beams (62) is secured to the support ring (66) and the center downcomer (42) to transfer the load to the column shell (22). Bolting clips (71) extend between the annular downcomer (38) and another support ring (70) to transfer another portion of the centrifugal contact tray load to the column shell (22).